Pesticides are Poison

by Jeff Conant

The Hesperian Foundation is a non-profit publisher of health materials seeking to empower communities and individuals to take more control of their own health as part of building a more just world. As co-conveners of the U.S. Circle of the People's Health Movement, we demand "Health for All, NOW!"

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Pesticides are Poison

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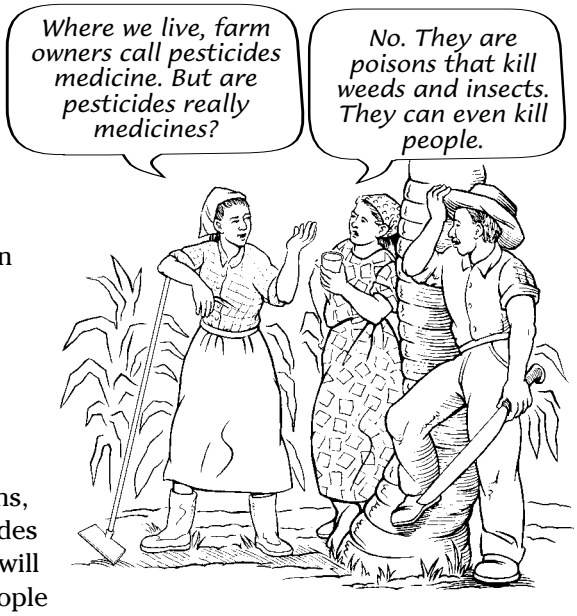
Pesticides are Poison

What are pesticides?

Pesticides are chemicals used to kill insects, rodents, and weeds that might harm our crops and our health. But pesticides also poison and kill other living things, including helpful plants, animals, and people. Pesticides can drift for miles from where they are applied and pollute the soil, the water, and the air.

In this book we use the word *pesticides* to describe all chemicals used to control pests. They include:

- ***Insecticides*** used to kill insects.
- ***Herbicides*** used to kill weeds.
- ***Fungicides*** used to control plant diseases.
- ***Rodenticides*** used to kill rats, mice and other rodents.


Where we live, farm owners call pesticides medicine. But are pesticides really medicines?
No. They are poisons that kill weeds and insects. They can even kill people.

Farmers did not always use pesticides. In the past, farmers had many safe ways to control pests. Many farmers still use traditional methods with great success. If you have a choice, it is best not to use pesticides.

But many people who use pesticides are workers on large farms and plantations, and they seem to have no choice. Pesticides are never safe. But we hope this chapter will help farmers, plantation workers, and people who use pesticides at home to be as safe as possible.

This booklet can also help people who want to return to traditional methods of agriculture use safer methods of pest control, or farm without chemical pesticides and fertilizers.

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Why do people use pesticides?

Pesticides are not healthy for the farm, the farmer, or the farm worker. So why do people use them?

Pesticides are often used together with farm machines, giant irrigation systems and low-paid workers to produce large quantities of food and other crops on big areas of land. In the short term, this way of working produces crops that can be sold cheaply. Because it can increase yields, farmers all over the world are pressured to work this way. This giant farm economy is motivated by profit, and peoples' health has little importance.

For small farmers to compete with large farms, they too must use pesticides to produce food. When a poor farmer needs to feed his family today, it is difficult to think about his own health or his family's health tomorrow. While pesticides can help produce large amounts of food in the short term, over time they can cause great harm to people and to the environment. After many years of spraying, pests may become resistant to chemicals. Pesticides also kill many non-pest insects and birds that would otherwise control crop pests. Pesticides then fail to help any more, crop yields go down, and small farmers, especially, are affected.

The companies that make pesticides say their products will help all farmers to "feed the world." But what these companies really want is to make money. Pesticides are one part of an unjust system that makes a few people richer and makes everyone else sick.

There are many types and brands of pesticides, and they are called different names in different countries. Some pesticides that are banned in one country for being very dangerous may be sold in other countries.

Pesticides are made in different forms: powders for mixing with water and spraying, granules and dusts for dusting, liquids for spraying, coatings on seeds, pellets to kill rodents, and others. Mosquito coils and rat poisons are common for killing pests at home.

Pesticides are sold in different packages: cans, bottles, buckets, bags and others. Pesticides are often put in containers other than the ones they originally came in. No matter what kind of pesticide it is, no matter what form it is in, no matter what kind of package it is in, **pesticides are poison!**

I understand that pesticides are poison, but I still need to go to work on the banana plantation to earn money for my family. Sometimes I feel sick when I go home. How can I know if it is from the pesticides we use?

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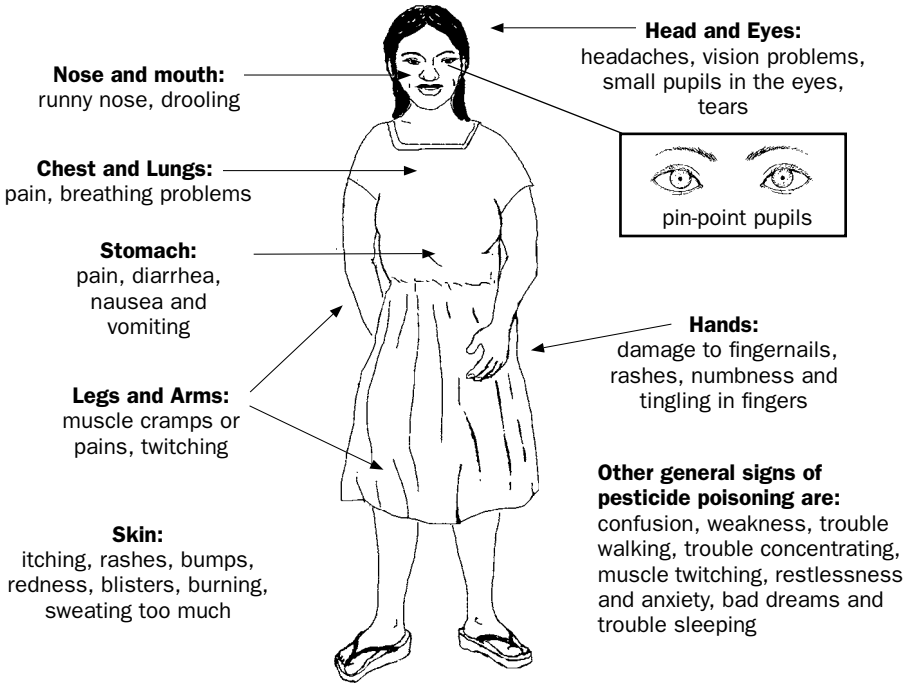
How Do People Get Sick from Pesticides?

Pesticides can poison people in different ways: through the skin, through the eyes, through the mouth (by swallowing) or through the air (by breathing). Each kind of poisoning needs a different kind of treatment.

Pesticide poisoning can cause many health problems. A person exposed to pesticides can have more than one sign. Some signs show up when the person is exposed. Other signs do not show up until hours, days, or even years later.

Many people are exposed to pesticides but may not know it. Children, laundry workers, garbage and recycling workers, and others may be in just as much danger of poisoning as farm workers. They should be aware that there are pesticides in their environment, and follow the same precautions as farm workers.

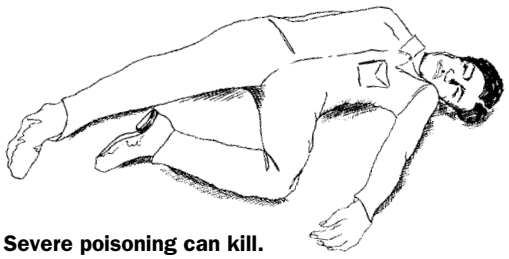
Signs of pesticide poisoning


Head and Eyes:
headaches, vision problems, small pupils in the eyes, tears
pin-point pupils
Nose and mouth:
runny nose, drooling
Chest and Lungs:
pain, breathing problems
Stomach:
pain, diarrhea, nausea and vomiting
Hands:
damage to fingernails, rashes, numbness and tingling in fingers
Legs and Arms:
muscle cramps or pains, twitching
Other general signs of pesticide poisoning are:
confusion, weakness, trouble walking, trouble concentrating, muscle twitching, restlessness and anxiety, bad dreams and trouble sleeping
Skin:
itching, rashes, bumps, redness, blisters, burning, sweating too much

If you have any of these problems while working with pesticides, leave the worksite immediately. Do not wait until you feel worse. Get away from the pesticides and go to a hospital or clinic right away!

Signs of severe poisoning:

Unconsciousness, loss of control over bladder and bowels (peeing and shitting without control), blue lips and fingernails, shaking.



Severe poisoning can kill.

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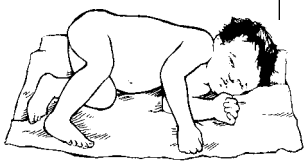
Children Have a High Risk of Pesticide Poisoning

Pesticides are more dangerous to children than they are to adults. Children get sick from amounts of pesticides that may not hurt adults. Amounts of pesticides that will only make adults sick may kill babies and children.

Because they are smaller, children get sick from small amounts of pesticides. Because children breathe much faster than adults, they get sick more easily from toxics in the air. Because they put their hands and other things in their mouths more than adults, they are likely to eat things that will harm them. And because young children are closer to the ground, they are likely to breathe in more chemicals from the air that drift close to the ground, or that collect in dust.

Signs of Pesticide Poisoning in Children



Pesticides affect children more than adults. Even small doses of poison can affect a child's ability to learn and grow, and may cause allergies and breathing problems that will last his whole life.

Common signs of pesticide poisoning in children are:

- tiredness
- fits and shaking (seizures)
- unconsciousness

Signs that may show up months or years after a child is exposed to chemicals include:

- allergies
- breathing problems
- difficulty learning
- slow growth
- cancer
- other health problems may be made worse

Pesticides can also cause birth defects (see page 15).
To learn how to protect children from pesticides, see page 24.

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A Village Struggles Against Pesticide Poisoning

People in Padre Village in Kerala, India used to think they were cursed. Young people suffered from serious health problems like epilepsy, brain damage, and cancer, and did not grow as they should. Many women were unable to give birth, and many babies were born with missing arms and legs. What could cause all of this illness besides a curse?

Padre village was famous for its rich cashew plantations. Years ago, the company that owns the cashew plantations began spraying a pesticide called endosulfan. After spraying began, villagers noticed that bees, frogs, and fish vanished from the area. In the cashew trees no insects chirped and no birds sang. Many people thought they were killed by endosulfan, but they could not prove it.

Shree Padre, a local farmer and journalist, saw his calves born with deformed limbs. Since endosulfan had been sprayed near his farm many times, he wondered if the birth defects were caused by the pesticide. He began to write a story about it for the local paper.

Shree Padre spoke with a doctor who began to collect medical records. After writing to people all over India, they learned that almost all the problems they noticed were known to be health effects of endosulfan.

Word spread that the ill health of the people was caused by endosulfan.

Villagers gathered at the plantation offices and demanded that the spraying be stopped. The police were called in and protests were broken up.

Soon, the local press and television picked up the story. Before long people across India and around the world learned about the health problems caused by endosulfan. The government passed a law banning endosulfan in Kerala.

But the pesticide industry argued that endosulfan was safe. They paid doctors and scientists to say that the health problems had no connection to endosulfan. Soon, due to pressure from the pesticide industry, the ban was dropped. Plantations in Padre began spraying again.

Farmers, doctors, and villagers from the area demanded that the government study the problem. Finally, the government agreed with the people of Padre Village: Endosulfan was a deadly poison. A law was passed to ban it once and for all in that part of India.

But Endosulfan is still sprayed in other parts of India. The law calls it poison in some places, while it is considered safe in others. Poisons like Endosulfan are only outlawed when people — like the villagers of Padre — work to pressure industry and governments for change.

Because pesticides spread poison over the whole world, no one is free from harm until everyone is free from harm.

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Pesticide Poisoning and Treatment

Pesticides can poison people in different ways: through the skin, through the eyes, through the mouth (by swallowing) or through the air (by breathing). Each kind of poisoning needs a different kind of treatment.

When pesticides enter the body through the skin

Most pesticide poisonings happen when pesticides get on the skin. If you think you got pesticides on your skin, remove any clothing the pesticides spilled on, and wash yourself with soap and cool water right away.

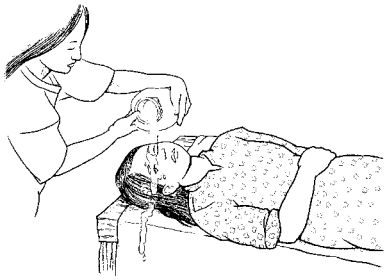
Pesticides can poison you through your skin when they spill in transport, when they splash during mixing, or when you spray or touch crops that have just been sprayed. Pesticides can also get on your skin through your clothes, or when you wash clothes with pesticides on them.

Rashes are one of the first signs of poisoning through the skin. Because skin problems may be caused by other things, like a reaction to plants, insect bites, infections or allergies, it can be hard to know if the problem is caused by pesticides. If you have skin rashes, talk to other workers to find out if the crop you are working with causes this kind of reaction. If you work with pesticides and have any unexpected skin rashes, treat the problem as if it is caused by pesticides.

Treatment

If you or someone else gets pesticides on the body:

- Quickly remove any clothing the pesticides spilled on.
- Wash the pesticides off quickly with soap and cool water.
- If it got into the eye, rinse the eye with clean water for 15 minutes.
- If the skin is burned from pesticides:
  - rinse well with cool water
  - do not remove anything stuck to the burn
  - do not apply lotions, fats, or butter
  - do not break blisters
  - do not remove loose skin
  - cover the area with a sterile dressing if available
- **If pain lasts, get medical help!** Bring the pesticide label or name with you.



Remember, pesticides can be there even if you cannot see or smell them. They can stick to your skin, hair, and clothes. **Always wash with soap after using pesticides.**

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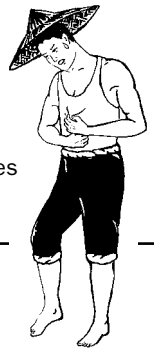
When pesticides enter the body through the mouth

People can swallow pesticides by eating, drinking, or smoking in the fields while working with pesticides, or by drinking water polluted with pesticides.



Eating foods sprayed with pesticides might make you sick later.

Treatment

If you or someone else swallows pesticides:

- If the person is unconscious, lay her on her side and make sure she is breathing.
- If the person is not breathing, quickly do mouth-to-mouth breathing. Mouth-to-mouth breathing can expose you to pesticide residue, so use a pocket mask, a piece of cloth, or thick plastic wrap with a hole cut in the middle, to avoid getting pesticides in your mouth.
- If the person can drink, give her lots of clean water.
- Find the pesticide package and read the label right away. The label will tell you if you should make the person vomit up the poison or not.
- Seek medical help. Always take the pesticide label or name with you if it is available.

> **Do not vomit if the label says not to.** Never vomit after swallowing a pesticide with gasoline, kerosene, xylene, or other petroleum-based liquids. This will make the problem worse. Never make the person vomit or drink if he is unconscious, confused, or shaking badly.

If you are sure that vomiting is okay:

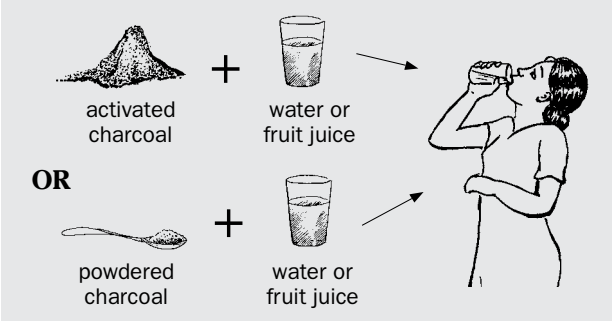
Give the person:

- a glass of soapy water, or
- a glass of very salty water

Keep the person moving around. This can help her vomit sooner.

After vomiting, activated or powdered charcoal can help absorb any poison still in the stomach.

Mix 1 cup of **activated charcoal** or 1 tablespoon of **powdered charcoal** with one cup of water or fruit juice in a large glass or jar.



Make powdered charcoal from burnt wood, or even burnt toast or tortilla. This is not as good as activated charcoal, but it still works. NEVER use charcoal briquettes. They are poison!

(See more on next page.)

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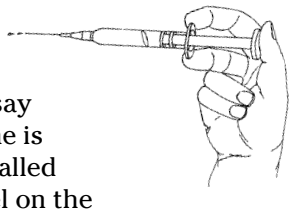
Treatment (continued)

To help slow down the poison while getting the person to a doctor have her drink:

- 1 raw egg white, or
- 1 tablespoon of powdered charcoal or burnt tortilla in water, or
- a glass of cow's milk

Drinking milk DOES NOT prevent pesticide poisoning.

If someone swallowed pesticides but does not have sharp stomach pain, they can take *Sorbitol* or *Magnesium Hydroxide* (Milk of Magnesia). These medicines cause diarrhea which can help to get poisons out of the body.



When to use atropine

- The label on the pesticide container should say if *atropine* can be used for poisoning. Atropine is used for treating poisoning from pesticides called *organophosphates* and *carbamates*. If the label on the pesticide container says to use atropine, or if it says the pesticide is a "cholinesterase inhibitor," use atropine as directed. If the label does not say to use atropine, do not use it.

  ***Atropine* is only used for organophosphate and carbamate poisoning!**

  Atropine DOES NOT prevent pesticide poisoning. It only delays the effects of poisoning. *Atropine* should never be taken before spraying.

IMPORTANT **DO NOT give these drugs for pesticide poisoning:**

Sedatives, morphine, barbiturates, phenothiazines, aminophylline, or any drugs that slow or lessen breathing. They can make the person stop breathing completely.

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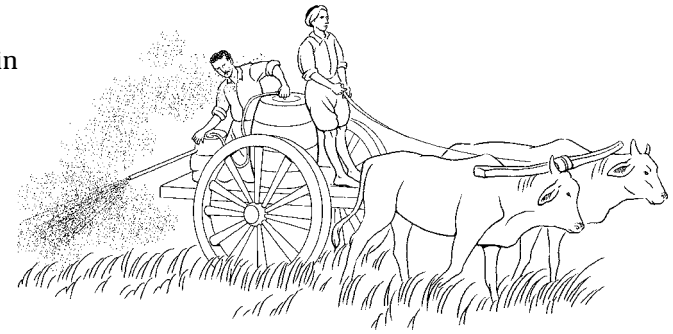
When pesticides enter the body through the air

When pesticides are released into the air, we breathe them in through our nose and mouth. Once in our lungs, they quickly enter the blood and spread poison through the whole body.



If you have doubt, get out!

Because some pesticides have no smell, it is often hard to know if pesticides are in the air. The most common forms of air-borne pesticides are fumigants, aerosols, foggers, smoke bombs, pest strips, residue, and sprays. You can also inhale pesticide dust in a storage area, being used in a greenhouse, or being transported to the fields.

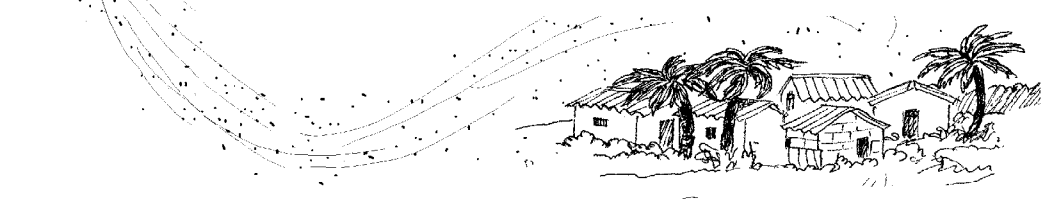
If you think you have breathed in pesticides, **get away from the pesticides right away! Do not wait until you feel worse.**

Treatment

If you or someone else breathes in pesticides:

- Get the person away from the area where she breathed in the poison, especially if it is an enclosed area.
- Get fresh air.
- Loosen clothing.
- Sit with head and shoulders raised.
- If the person is unconscious, lay her on her side and watch her to make sure she is breathing.
- If the person is not breathing, quickly do mouth-to-mouth breathing. Use a pocket mask, a piece of cloth, or thick plastic wrap with a hole cut in the middle, to avoid getting pesticides in your mouth.
- Seek medical help. Take the pesticide label or name with you.

Pesticides may drift far from where they were applied. Pesticide dust gets into the air and can travel miles to pollute a new area. It is easy for pesticide dust to get into houses.



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To Make a First-Aid Kit for a Pesticide Emergency

Post the address and phone number of the nearest medical clinic or hospital in central locations. Decide how you will transport someone to the clinic or hospital. Find out if there is a vehicle that you can use in an emergency. Review the labels of the pesticides you use to find out which medicines are recommended for poisonings. See page 26 for how to read labels.

Keep a first-aid kit nearby

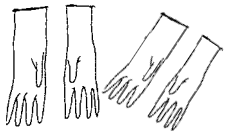
Make a first-aid kit in a container with a tightly fitting cover so that no pesticides can leak into the kit. Make sure everyone, including new workers, knows where it is and how to use it.

WHAT TO PUT IN A FIRST AID KIT

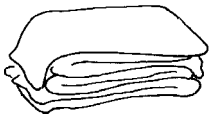
One bar of soap

Two quarts or liters of drinking water

Cups for drinking

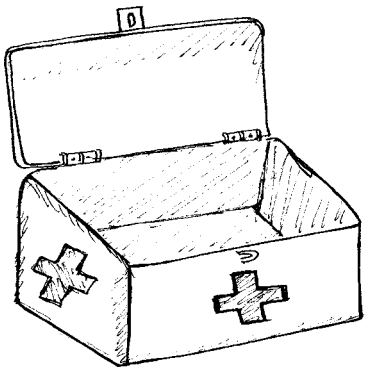


Two pairs of gloves — thick rubber gloves are best



blanket to cover or carry a poisoned person

Spare clothes to change into in case of skin poisoning



List of locally used pesticides, what crops they are used on, and their health effects.

Clean cloths for washing skin and soaking up spilled pesticides

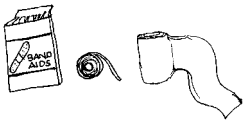
Scissors or a knife for cutting bandages, tape and plastic wrap.

One bottle of activated charcoal or powdered charcoal (See page 9 for how to use charcoal.)

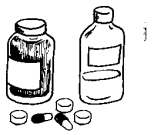
Coins or a phone card taped to cover to make emergency phone call at public phone

A pocket mask, piece of cloth or thick plastic wrap with a hole cut in the middle can be used to protect you when you do mouth-to-mouth breathing.

Salt to mix with water to cause vomiting.



Band-aids, bandages, and tape to cover cuts and scrapes



Medicines that are listed on the pesticide labels

NOTE: This is a kit for a small farm. If there are many people working with pesticides, have several kits like this available.

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Long-term Health Effects of Pesticides

Long-term pesticide poisoning

Most pesticide poisoning does not come from only one exposure, but from contact with pesticides over weeks, months, or years. People exposed this way may not get sick until many years later. In adults, it can take 5, 10, 20, 30 years or more to get sick from regular exposure. How long it takes for illness to show up can depend on many things, such as the age of the person, their daily habits, and the kind of illness. In children, it usually takes less time. Illness from pesticides can even start before a baby is born, while the mother is pregnant and in contact with pesticides.

Long-term illness

When a person is exposed to pesticides over a long period of time, it is hard to know if her health problems are caused by pesticides. **Long-term exposure may cause long-term harm.**

Juan worked in the banana plantations…

… and ten years later, he developed cancer.

Many long-term effects of pesticides are hard to see because people in farming areas are exposed to so many different chemicals and because farm workers may move from place to place.

When people get cancer and other diseases, doctors and scientists may say that the illness is due to chance, or to problems other than pesticides or contamination. They may tell us that we cannot blame pesticides. And sometimes people who sell pesticides or promote pesticide use will lie about it because they do not want to be responsible for other people's health problems.

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Signs of long-term or chronic illness from pesticides

Weight loss, constant weakness, constant or bloody cough, wounds that do not heal, numb hands or feet, poor balance, loss of vision, very fast or very slow heartbeat, sudden mood changes, confusion, memory loss, and trouble concentrating.

If you have any of these signs, tell your doctor or health worker. Be sure to tell the doctor or health worker all the ways you may have been in contact with pesticides.

Some long-term health effects of pesticides

Damage to the lungs: People exposed to pesticides may get a cough that never goes away or have a tight feeling in their chest. These can be signs of bronchitis, asthma, or other lung diseases. Damage done over time to the lungs may lead to lung cancer. If you have any signs of lung damage, do not smoke! Smoking makes lung disease worse.

Cancer: If you are exposed to pesticides you have a higher chance of getting cancer. This does not mean that you will get cancer. But it means that working with pesticides gives you a higher risk of getting the disease.

Hundreds of pesticides and pesticide ingredients are known or believed to cause cancer, and many more have not been studied. The most common cancers caused by pesticides are blood cancer (leukemia), non-hodgkins lymphoma, and brain cancer.

Because **alcohol can damage the liver...**

... drinking alcohol makes pesticide poisoning worse.

Damage to the liver: The liver helps clean the blood and get rid of poisons. Since pesticides are very strong poisons, the liver sometimes cannot get rid of them. Severe liver damage can happen after a serious poisoning or after working with pesticides for many months or years.

Toxic hepatitis is a liver disease people get from being exposed to pesticides. Toxic hepatitis can cause nausea, vomiting and fever, yellowing of the skin, and can destroy your liver.

Damage to the nervous system: Pesticides damage the brain and the nerves. Long-term exposure to pesticides can cause loss of memory, anxiety, mood changes, and trouble concentrating.

Damage to the immune system: Some pesticides weaken the immune system that protects the body from disease. When the immune system is weak, it is easier to get allergies and infections and is harder to heal from ordinary illnesses. This is why pesticide exposure can make other health problems worse.

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Reproductive health effects of pesticides

Pesticides can affect the ability of people to have babies and for babies to grow up healthy. Men can become sterile (unable to make sperm). Women can become infertile (unable to become pregnant). Pesticides are also very dangerous for mothers and pregnant women. When a pregnant woman is exposed to pesticides, the baby inside her may also be exposed. This is one way that birth defects, learning difficulties, allergies, and other health problems are caused.

Chemicals can enter a woman's body and appear in her breast milk later. There are so many pesticides in use all over the world that even mothers who have never used pesticides have some toxic chemicals in their breast milk.

BREAST IS BEST!

Even if you are worried that your breast milk may have pesticides in it, the benefits of breastfeeding are stronger than any possible harm from pesticides in breast milk. Breast milk is the only perfect food to help a baby grow healthy and strong. **Breast is best!**

Some effects of pesticides on reproductive health are:

Damage to hormone-producing glands: Hormones control many of our body activities, like growth and reproduction. Many pesticides damage the glands that produce hormones. This can cause problems with childbirth and reproduction.

Even if a woman is exposed to pesticides **before** she is pregnant, she can have a miscarriage or stillbirth later because of the exposure.

Sterility: Many male farm workers around the world have become unable to have children after they worked with certain pesticides.

Birth defects: When a pregnant woman is exposed to pesticides, it can cause damage to the unborn child. **Being exposed to pesticides does not mean that your baby will have birth defects.** It simply means that your baby has a higher chance of having birth defects.

A man working with pesticides can affect his pregnant wife.

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Pesticide Poisoning Can Look Like Other Illnesses

Because there are many different signs of pesticide poisoning, it can be hard to know if a person is sick from pesticides or from something else. Often, the signs may be confused with flu, malaria, an allergic reaction, lung diseases, or different kinds of stomach problems. It is unusual to have only one sign — most of the time several signs come together. You might not even know someone was poisoned because the signs can come on slowly.

What are some of the symptoms of pesticide poisoning?
Headache and dizziness.
Vomiting, sweating and diarrhea.
But the flu also causes vomiting and sweating.
So does malaria.
And having a hangover!
And being pregnant!

Note for the health worker:

Pesticide posioning is easily confused with other health problems. To find out if someone's health problems may be related to pesticides, ask some simple questions, such as:

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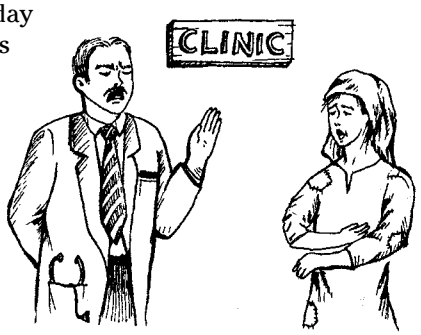
How do you know if a health problem is caused by pesticides?

One way to know if a sickness is caused by pesticides is to talk to people who have the same sickness, or who work with the same pesticides.

If they share the same signs of poisoning, and if there are pesticides used nearby, they may be sick from the pesticides.

Doctors Do Not Always Have the Answer

Carolina worked on a strawberry farm. One day she began to have stomach pain and her eyes burned. She stopped working and went to talk to her boss. Her boss told her to go see the company doctor.



When she got to the doctor's office, he was not very friendly or helpful. Carolina thought that pesticides might have made her sick, but she was too shy to say this to the doctor. The doctor did not ask her about pesticides or why she thought she was sick.

The doctor asked Carolina questions that made her feel like it was her fault for being sick. In the end the doctor told her she was just lazy and that she only wanted a note to get out of work. He even said she might be sick from being drunk!

Finally the doctor gave her some pills for headaches. She was not sure the pills would help, but she accepted them anyway. As she went home, she wondered about going back to work the next day. She thought she would probably get sick again, because the doctor did not help her at all. In fact, she felt worse after seeing the doctor than she did before.

What could Carolina have done to get better care for her illness?

Perhaps if she brought the label of the pesticide she worked with and told the doctor this is what made her sick, she would have gotten better care.

But even if she did this, the doctor may not have helped.

The doctor worked for the company. Often company doctors will not admit that pesticides make company workers sick. Pesticide illness can be difficult and expensive to treat, and the company may prefer to hire new workers rather than give good treatment to the workers they have.

Carolina could have gone to a doctor who did not work for the company. But this could be expensive, and she would have to take more time off from work. And sometimes even doctors who do not work for the company do not know much about pesticides.

This is a very difficult problem for Carolina, and for all farm workers. The best way for people like Carolina to get better treatment is to work together to change the conditions that make them sick in the first place.

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How to Reduce Risk from Pesticide Use

Most farm workers do not like to use pesticides. Nobody wants to endanger his health or his family's health. But for farmers who must produce crops for market, or for farm workers who work on other people's land, sometimes there does not seem to be any choice.

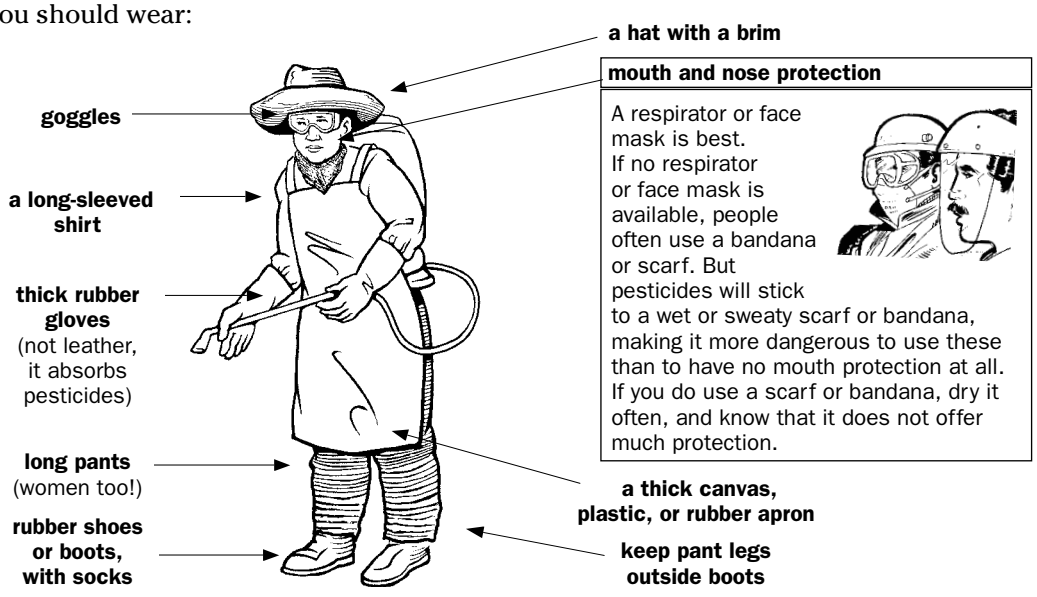
If you work with pesticides, use them with great care. Be responsible for your own well-being and the well-being of other people and the environment. Here are some things you can do to protect yourself and those around you:

- Control pests without pesticides if possible.
- Do not work alone with pesticides.
- Use the pesticide only on the crop it is meant for.
- Use the smallest amount you can. More is not always better.
- Do not mix different pesticides together.
- Keep pesticides off your body.
- Keep pesticides off other people.
- Keep pesticides away from water sources.
- Do not use pesticides when it is windy, raining, or about to rain.
- Make sure your clothing covers you completely.
- Try not to wipe your eyes, face, and neck when you handle pesticides.
- Wash your hands before eating, drinking, or touching your face.
- Use protective clothing and equipment if you have it or can get it.
- Do not enter sprayed fields until it is safe to do so. See page 20.
- Bathe well after using pesticides.

WHEN YOU WORK IN THE FIELDS

Wear protective clothing

If you work with pesticides or enter a field soon after pesticides have been sprayed, you should wear:


a hat with a brim
mouth and nose protection
A respirator or face mask is best. If no respirator or face mask is available, people often use a bandana or scarf. But pesticides will stick to a wet or sweaty scarf or bandana, making it more dangerous to use these than to have no mouth protection at all. If you do use a scarf or bandana, dry it often, and know that it does not offer much protection.
goggles
a long-sleeved shirt
thick rubber gloves (not leather, it absorbs pesticides)
long pants (women too!)
rubber shoes or boots, with socks
a thick canvas, plastic, or rubber apron
keep pant legs outside boots

It is said that there are 3 kinds of protective gear in poor countries: too big, too small, and torn. If you do not have protective gear, you can wear a rainsuit or make protective clothing out of large plastic bags. Cut holes for your head and arms and put other bags on your arms and legs.

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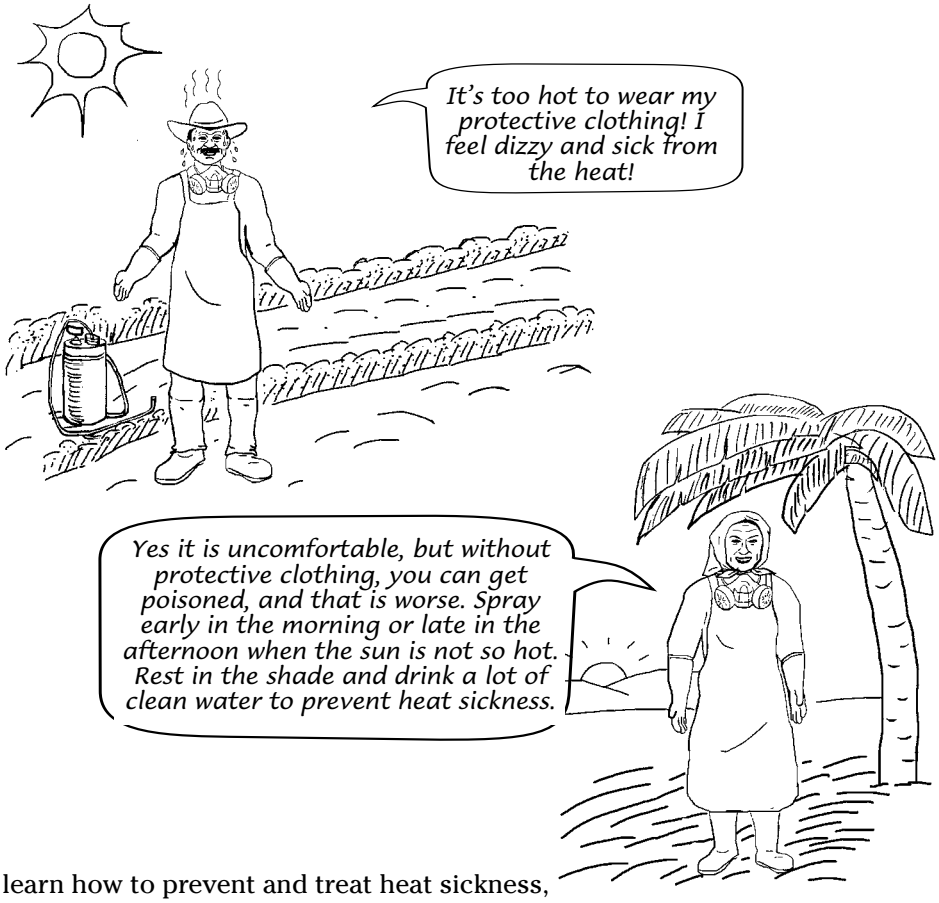
Make sure your equipment works properly

Check equipment for safety before you use it. Make sure pesticide applicators are not damaged and will not leak on you. Do not wear a cracked or broken backpack sprayer or ripped or cracked gloves. If you use a *respirator*, change the filters every day.

Breathing any pesticide without a respirator can affect your health. But most farmers and farm workers cannot get good protective gear. This is part of the reason why using pesticides is not safe.
Protective gear like respirators and gloves are made for men — they do not fit women's bodies right and are too big for young people. Women use pesticides as much or more than men. Protective equipment should protect them also! Be sure protective equipment fits well before you use it.

Protective clothing may be uncomfortable, but it can save your life.


It's too hot to wear my protective clothing! I feel dizzy and sick from the heat!
Yes it is uncomfortable, but without protective clothing, you can get poisoned, and that is worse. Spray early in the morning or late in the afternoon when the sun is not so hot. Rest in the shade and drink a lot of clean water to prevent heat sickness.

To learn how to prevent and treat heat sickness, see *Where There is No Doctor* or another medical book.

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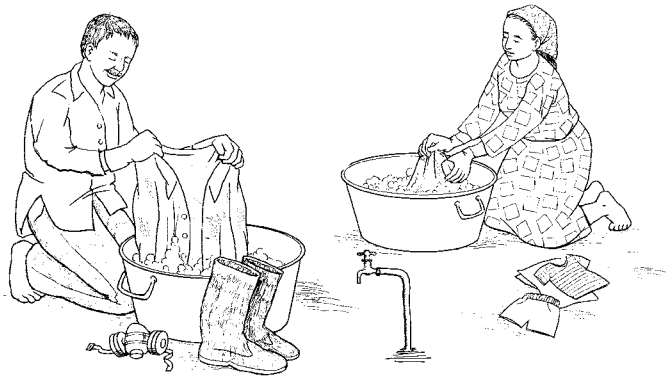
Wash your hands with water and soap every time you take a break, and wash after working with pesticides

Wash your hands before eating, smoking, drinking, chewing gum or tobacco, touching your eyes, nose, or mouth, and before going to the bathroom.

After working and before washing, clean under your fingernails and toenails. Wash your whole body with soap and cool water.

Wash your clothes with care after working with pesticides

Washing work clothes is one of the most important things you can do to prevent pesticide poisoning. When work clothes are put back on without being washed, the skin is exposed to pesticides.



After work, change into clean clothing and put work clothes in a plastic bag or special container to protect the person who has to wash them (even if it is you).

Always wash work clothes apart from regular and family clothes.

Use clean water and soap and wear gloves to protect your hands. Do not wash pesticide covered clothes in rivers or other natural waterways**. Never bathe or wash anything in irrigation or drainage ditches!** Try not to touch the clothes without gloves, and wash your hands afterwards. Throw dirty water back onto fields, away from drinking water sources.

Wash small amounts of clothes at a time. Repeat the wash if the pesticide stain or smell does not go away. Also wash boots, gloves, and hats with soap and water.

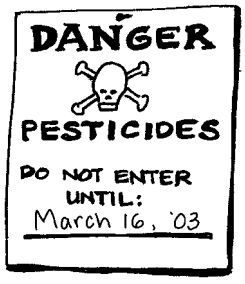
Hang clothes to dry away from pesticide spray. **Do not air dry clothes when pesticides are being sprayed nearby or from airplanes above!**

Before washing other clothes in the washing basin, clean it with fresh water and detergent.

Always store work clothes separately from other clothing.

Do not enter a field right after spraying

Wait until sprays have dried and dusts have settled before entering a field. Find out what pesticides have been used and do not enter the field until it is safe. See the pesticide label to know how soon after spraying it is safe to enter a field (see pages 26 to 27).



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WHEN YOU MOVE AND STORE PESTICIDES

Keep pesticides in their proper containers

Do not put pesticides in feed sacks, drink bottles, or water buckets. Make sure pesticide containers are tightly closed and stored upright. Check them for breaks, leaks, and weak spots.

Label pesticide containers

If you buy small amounts of pesticides and put them in other containers, label the containers with the name of the pesticide and a picture that means "danger," for example a skull and crossbones.

Do not use those containers for anything else. Store pesticides out of the reach of children, in a locked cabinet or container, away from food or feed.

Never use pesticide containers to carry water for drinking or washing.

Take care in transport

When you transport pesticides, put them in back of the truck or in the car trunk. Tie the containers down so they cannot move or fall over. Do not carry pesticides in your food basket or on your head. Do not let children buy or carry pesticides.

Get rid of empty pesticide containers

Never use empty pesticide containers for drinking, washing, food storage or anything else. Do not use plastic pesticide wraps for raincoats or any other personal use.

Never burn pesticide containers. They will make toxic smoke and may explode.

The best thing to do with empty pesticide containers is to bury them. Wash them first to stop the poison from spreading to other places. Fill empty pesticide cans partially with water and rinse the inside of the can. Repeat 2 times. Put the rinse water in your sprayer tank or on the field, **not** into water meant for any other use.

Make a hole in the container and then flatten it. Bury it at least 50 meters from water.

Dig a pit and line the bottom and sides with a layer of concrete. Put the containers in the pit and fill it with stones and soil.

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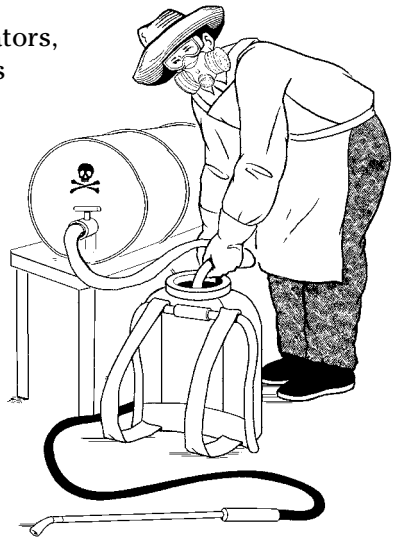
WHEN YOU MIX AND LOAD PESTICIDES

Wear protective clothing

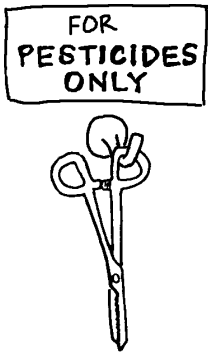
When you mix pesticides and load them into applicators, wear eye protection, rubber gloves, and an apron, as well as the other protective clothing you would normally wear. (See page 18.)



IMPORTANT **NEVER mix pesticides with your hands.**

Take precautions

Open bags of pesticides with a sharp knife or scissors so pesticide dust will not spill out. Label the knife or scissors, wash them, and keep them for pesticide use only.



If you add water to pesticides, never put the water hose directly into a pesticide mixture. Keep the hose clean in case people use it for drinking or washing.

Follow the directions for measurements. Use the amount directed on the label.

Never mix, load, or clean equipment near waterways or drinking water sources!

Keep pesticides out of your mouth

Never use your mouth to blow out a clogged nozzle, to draw pesticides out, or to transfer pesticides or fuels. Use a drinking straw instead. Always be very careful not to breathe in the poison.

Do not touch or taste pesticides or pesticide-coated seeds. Do not eat anything from the fields until you wash it carefully.

Do not smoke, drink, or eat while mixing or applying pesticides. Leave food, gum, and tobacco in sealed containers in areas that have not been treated with pesticides. Tobacco and food absorb pesticides, so do not carry them while working.

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IF YOU SPILL PESTICIDES

Before you clean up a pesticide spill, protect yourself, people nearby and water sources. If there is someone who is more prepared than you to clean up a spill —for example a person who has been trained to do this work — call them for help. Always wear protective clothing to do this work!

Control the spill

- The most important thing is to keep the spill from getting bigger. Shut down any leaking equipment, turn a fallen container right side up, or put the leaking container inside another one.

Contain the spill

- Absorb the pesticides by putting soil, sand, sawdust, clay or other material on the spill. If the material may blow around, moisten it with a little water or cover it with a cloth or plastic sheet.

Clean up the spill

- Scoop materials into barrels or thick plastic containers. Do not use water because it will spread the pesticides and make the problem worse. Dispose of the material safely.

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How to Protect Children from Pesticides

Besides staying away from pesticides, children:

- should not play with, use, or even touch old pesticide containers.
- should not play on farm equipment that is used to spray pesticides.
- should not wade or swim in irrigation or drainage ditches.
- should not enter or play in recently treated fields.

Adults can protect children from pesticides by:

- washing work clothes and shoes before entering the house and before touching children.
- washing children's clothes apart from parents' clothes.
- washing fruits and vegetables very well before eating them.

- not using pesticides at home, especially indoors.
- storing pesticide containers and equipment out of children's reach.

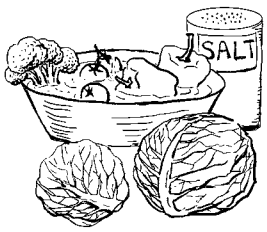
Pesticides on Food

Many fruits and vegetables have pesticides on them. Meat, milk, and eggs are often contaminated with pesticides that are used in animal dips and sprays, or if livestock eat feed or grass that contains pesticides and other chemicals.

When people eat or drink small amounts of pesticides day after day, poisons collect in their bodies over time. These small amounts can add up and cause long-term health problems.

To reduce the amount of pesticide residue, wash fruits and vegetables well in salt water (5 spoonfuls of salt to 1 liter of water), then rinse in fresh water.

Do not eat the outer leaves of leafy greens like cabbage and lettuce, because these are the parts that collect the most pesticides.



Foods that have waxy skins, like cucumbers and apples, should be peeled before eating.

Food that is *organic* (grown without pesticides) is much safer and healthier, both for the people who eat it and the people who grow it. Unfortunately, in many places it costs more and can be hard to get.

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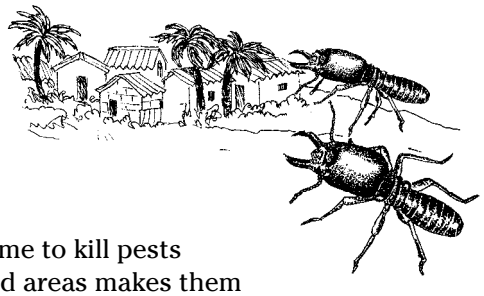
Pest Control at Home



People everywhere use poisons in their homes to kill mosquitoes, ants, flies, cockroaches, termites, fleas, rats, and other pests. But many of the poisons used on these creatures can also harm people.

Farm workers often bring field pesticides home to kill pests around the house. But using pesticides in closed areas makes them much more harmful. It is best to leave farm chemicals at work, and to use other methods to control pests at home.

There are many ways to control pests without chemicals. Some ways are listed here, and there are many others that you or people in your community may know. These ways are safer and less costly than pesticides and may work just as well.

Non-chemical pest control

Prevention first!

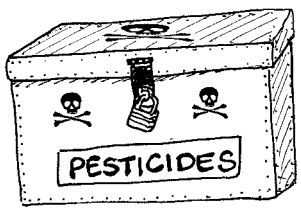
- Keep the kitchen clean, and store food in tightly closed containers.
- Keep animals clean and wash houseplants with soap and water.
- Keep trash bins closed.
- Clean and air bed linens often.
- Prevent termite damage by making sure that wooden building materials do not come into direct contact with the soil. Store firewood away from the home.

When prevention does not work, try these natural pest remedies:

- For ants, sprinkle red chili powder or dried peppermint where they enter.
- For roaches and silverfish, mix equal parts baking soda and powdered sugar and sprinkle it where they enter.
- For fly maggots, soak crushed basil leaves in water for 24 hours. Filter and spray onto maggots.

If you use pesticides at home

- Read the label and follow the directions.
- Do not use pesticides in closed areas. Open windows and doors.
- Use pesticides only for the pests they are meant to kill.
- Keep pesticides away from children.
- Never spray pesticides on a mattress or sleep on a sprayed mattress.
- Do not spray near dishes or eating utensils.
- Never put pesticides in unmarked containers.
- Get rid of unwanted pesticides safely.



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Read and Understand Pesticide Labels

All workers have the right to know what chemicals they are exposed to, what the risks are, and what protection they need. Pesticide packages are supposed to have labels so that people know how to use them correctly. These labels tell what poison is being used, how to mix and measure it, how to treat poisoning, how toxic the pesticide is, and how long to wait after using it before entering fields.

Many pesticide labels are hard to read. They may use language that is hard to understand. Or they may be printed in English, not in your local language. Since most field-workers do not even know what pesticides they are using, labels often do not help you to use pesticides safely.

Here is an example of a pesticide label. Other labels may look different, but they should have the same kind of information. But, even if you follow the instructions perfectly, pesticides can still harm you and your environment.

Active ingredients are the chemicals that make the pesticide work.

This shows how poisonous the pesticide is. Words you may see here include:

Danger, Poison - these are the most poisonous pesticides. This picture: near the word Warning, Poison, or Danger, means even a small amount is deadly.

Warning - very poisonous.

Caution - these are the least poisonous pesticides — but they can still cause serious health problems!

This tells what kind of protection you need when you use this pesticide.

This tells what to do in case of poisoning. This is important because it will say whether or not to make the person vomit.

NO PEST
ABC ChemCorp
INSECTICIDE

Reg. No. M7485

ACTIVE INGREDIENTS
deltathion (1,2 phospho-(5)-4 chloromethane) 50%
INERT INGREDIENTS 50%
TOTAL 100%

KEEP OUT OF REACH OF CHILDREN

DANGER **POISON**

PELIGRO

PRECAUTIONARY STATEMENTS

Wear long-sleeved clothing, full length trousers, eye protection, and protective gloves when handling. Wash hands and face before eating or using tobacco. Bathe at the end of work day, washing entire body and hair with soap and water. Change clothing daily. Wash contaminated clothing thoroughly before reusing.

STATEMENT OF PRACTICAL TREATMENT

Hazards to Humans and Domestic Animals

If Swallowed: Do not induce vomiting. Contains aromatic petroleum solvent. Call a physician or poison control center immediately. **If in Eyes:** Flush with plenty of water for at least 15 minutes. Get medical attention. **If on Skin:** Wash with plenty of soap and water. Get medical attention if irritation persists. **If Inhaled:** Remove to fresh air immediately. Get medical attention.

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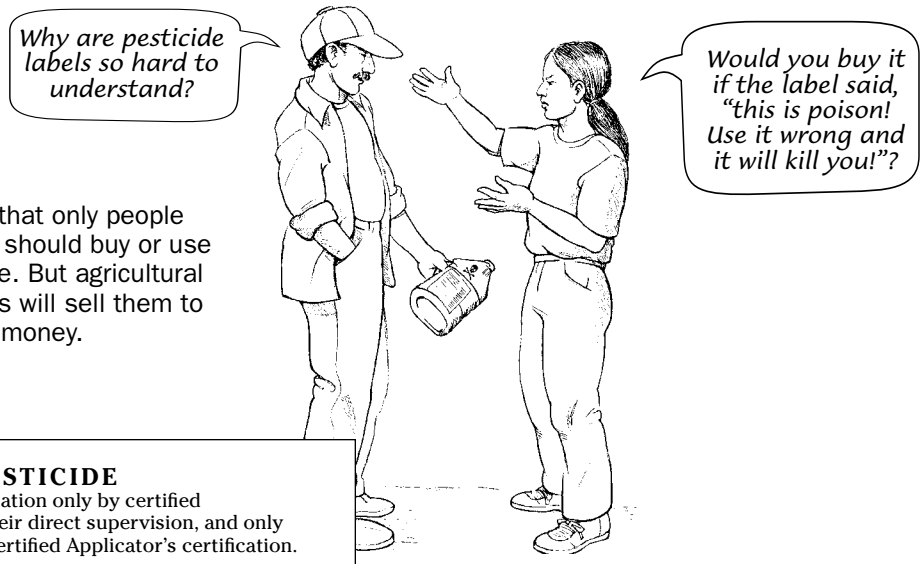
Why are pesticide labels so hard to understand?
Would you buy it if the label said, "this is poison! Use it wrong and it will kill you!"?

This means that only people with training should buy or use this pesticide. But agricultural supply stores will sell them to anyone with money.

RESTRICTED USE PESTICIDE
For retail sale only to and application only by certified applicators or persons under their direct supervision, and only for those uses covered by the Certified Applicator's certification.

NOTE TO PHYSICIANS:

"No Pest" is a cholinesterase inhibitor. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline date are useful). Atropine, only by injection, is the preferable antidote.

Information for a doctor about signs of poisoning and treatment. This is why the pesticide label should **always** be taken along when seeing a doctor.

If the label mentions *atropine*, this is another sign that it is a very dangerous pesticide.

ENVIRONMENTAL HAZARDS

This product is extremely toxic to fish and wildlife. Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Do not contaminate water by cleaning of equipment or disposal of wastes.

REENTRY STATEMENTS

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

Written or oral warnings must be given to workers who are expected to go in a treated area.

The REI or Restricted Entry Interval is the amount of time after the pesticide is applied before people can safely enter the field. This time is usually between four hours and three days.

DIRECTIONS FOR USE

Use specified dosage of NO PEST according to crop type described on table. Add ½ the amount of water indicated on table to the spray tank and begin agitation. Add the required amount of NO PEST to the spray mix. Add the remainder of the water and continue agitation until all solution has been applied.

How to mix, load, apply, store, and dispose of this pesticide.

STORAGE AND DISPOSAL

Store in original container only. Keep container tightly closed and upright. Avoid exposure to extreme temperatures. In case of spill or leakage, soak up with absorbent material such as sand, sawdust, earth, etc. Dispose of with chemical waste.

For container disposal, triple rinse and add rinsate to spray tank, then puncture and dispose of according to local authorities.

Color-Coding:
In many places, pesticide packages have different colors to show how poison they are. These color codes are different in different parts of the world. Learn the color codes in your area.

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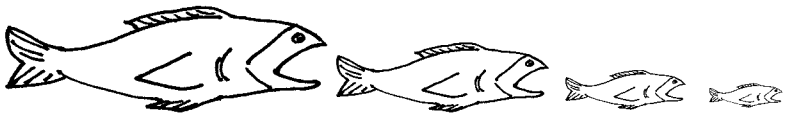
Pesticides Damage the Environment in Many Ways

Every farmer knows that pesticides cost money. But there are other costs the farmer may not consider when he buys pesticides. There is the cost to the health of the farmer and other people affected by pesticides. There is the cost of polluted water and soil. And there is the cost to the environment, fish, animals, and other wildlife.

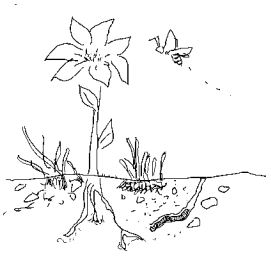
One day on the cotton farm I sprayed some termites with endosulfan. Later a frog ate the dying termites.
An owl swooped down on the frog and then sat in a tree to enjoy its meal. Ten minutes later, the owl fell down and died.

Animals eat, drink, and breathe toxic chemicals in the environment just like people do. When large animals such as owls, hawks, and humans eat smaller animals containing small amounts of pesticides, all of those pesticides collect in their bodies and poison them. This is one way that toxic chemicals spread from one place to another.

Poisons like pesticides collect in the fat of animals, including people. Since larger animals eat more and live longer, they often have more poison in their body. If fish live in water polluted by pesticides, then the large fish which eat the little ones can have so much pesticides collected in them that it may be unhealthy for people to eat a diet based on fish.



Pesticides poison the soil, water, and air



Soil: Farmers know that soil is not just dead material. Healthy soil is full of life. Insects, worms, fungi and bacteria keep the soil alive and create nutrients that make plants grow healthy.

When pesticides kill these creatures, the soil becomes less able to support growing plants. Plants that grow in this soil do not have the natural ability to protect themselves from pests. Farmers then use even more pesticides. This makes the problem worse. Over time, the soil dies and healthy plants will not grow in it at all.

Water: When pesticides get into streams and rivers, they can kill any animals that live in or use the water, including people.

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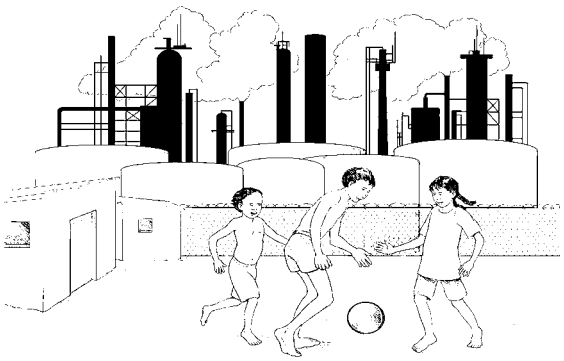
Air: Pesticides drift in the air and pollute the environment. Tests on living beings all over the world show that fish, birds, wildlife, livestock, and humans, including babies, all have small amounts of pesticides in their bodies. Pesticides affect everyone!



Pesticides pollute the air, soil, and water where they are used, and near factories where they are made...

... they also drift on the air and poison people far away from where they are used.

Pesticide resistance

Not all insects are pests. Many insects are helpful to farmers. Bees pollinate plants and make honey. Ladybugs and other insects attack insects that damage crops.

Pesticides often kill both the "good" insects and the "bad" insects.

For example, when a field is sprayed to kill aphids, the poison also kills the spiders and ladybugs that eat aphids. Without spiders and ladybugs to control them, more aphids come back the next season.

There are always a few pests that do not die even though they are sprayed with insecticides. They give birth to other pests that are not harmed by pesticides. This is called *pesticide resistance.* More and more pests are born with resistance, until there is a whole population of resistant pests that cannot be killed with the same chemicals.

Pesticide companies then create new or stronger pesticides to kill resistant pests. Farmers buy the new chemicals, spending more money each season. The environment is poisoned with more chemicals, more pests become resistant each year, and the pesticide companies make more and more profit.

While pesticides may work well for a season or two, in the long run they poison people, animals, the ground, and the water. The only long term benefit goes to the chemical companies that make and sell them.

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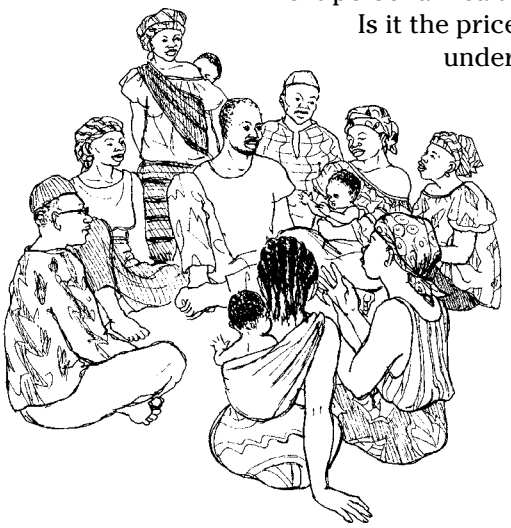
Starting a community pesticide education program

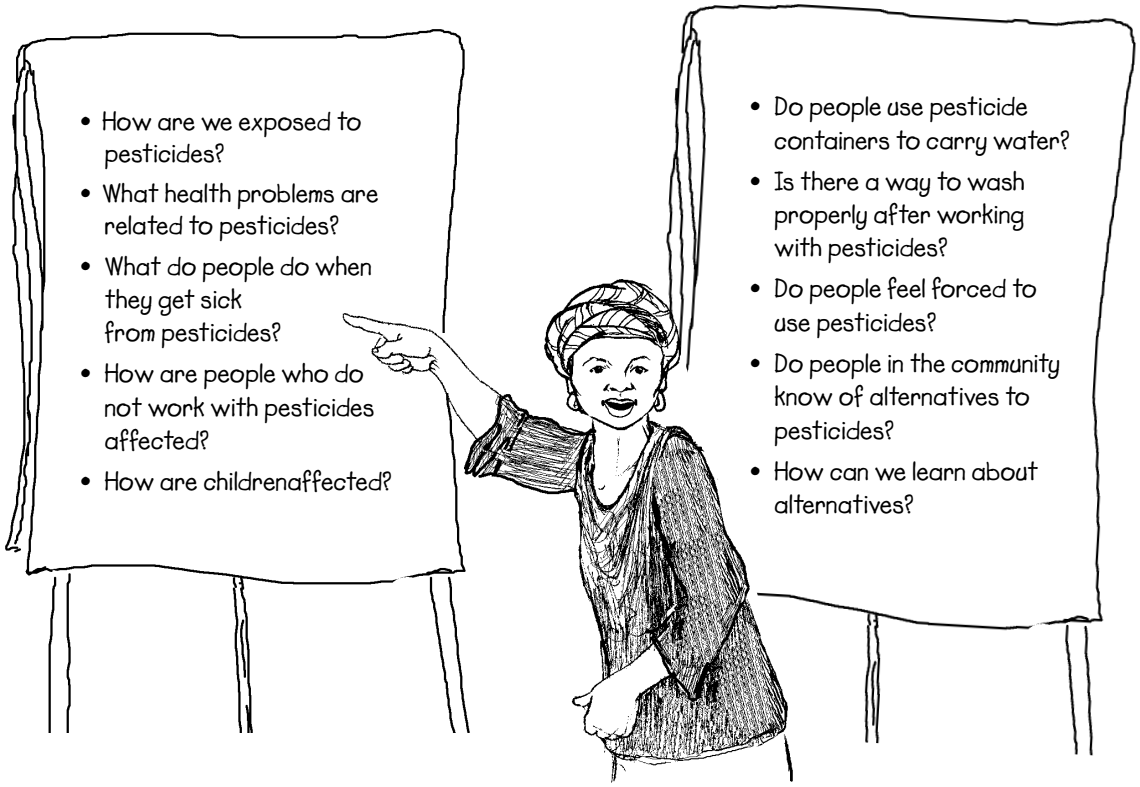
The first step in community education is to bring people together. Call a gathering in your village, town, or neighborhood, at a community center, someone's house, or some other place where people will feel comfortable to talk.

Once people are gathered, decide what things are most important to your community. Is it personal health? Is it water pollution from pesticides? Is it the price of pesticides? After there is some understanding of the problems, the next step will be to decide on the goal or goals of the pesticide education program. Maybe people want to organize pesticide safety trainings, or learn how to farm without pesticides. Many things can be done once people are organized to solve a problem.



A good way to start is by asking questions. This will get people talking about the problems in the community.

Here are some questions you can use in a group to start a discussion about pesticides:


• How are we exposed to pesticides?
• What health problems are related to pesticides?
• What do people do when they get sick from pesticides?
• How are people who do not work with pesticides affected?
• How are childrenaffected?
• Do people use pesticide containers to carry water?
• Is there a way to wash properly after working with pesticides?
• Do people feel forced to use pesticides?
• Do people in the community know of alternatives to pesticides?
• How can we learn about alternatives?

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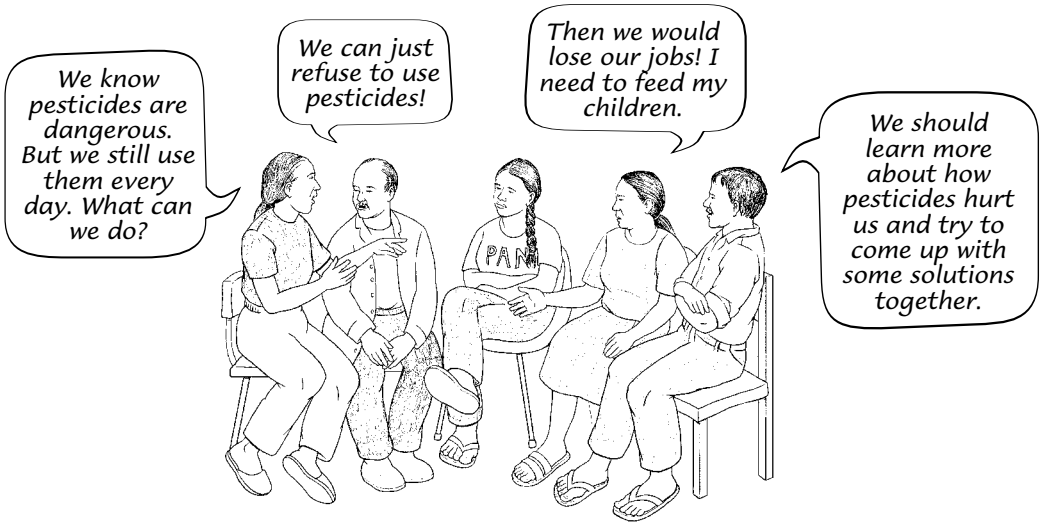
Education for Action: Community Pesticide Activities

Community education activities can help people learn how to protect themselves and their community from pesticide poisoning. The Body Mapping activity on page 32 can help people share their experiences of how they are hurt by pesticides. The Drawing for Discussion on page 33 can help people begin to talk about pesticide safety. And the Drawing Pesticide Solutions activity on page 34 can help a group start working toward solutions to pesticide problems.


We know pesticides are dangerous. But we still use them every day. What can we do?
We can just refuse to use pesticides!
Then we would lose our jobs! I need to feed my children.
We should learn more about how pesticides hurt us and try to come up with some solutions together.
PAN

Community Organizing: A Story from Bangladesh

A group of farmers in Bangladesh started a program to talk about what pesticides they used and who they bought them from. Their goals were to practice pesticide safety and to save money on their farms.

They found out that their local bank was working with the large agribusiness company Monsanto. The bank and the company made a partnership so that loans from the bank could only be used to buy products from Monsanto. This would force small farmers to use pesticides and seeds made by Monsanto, and would not allow them to take loans to buy other things like draft animals or organic seeds.

When these farmers found out about the partnership between Monsanto and the local bank, they organized their communities to speak out.

The farmers protested at the bank and refused to take out new loans. After many protests, the bank stopped working with Monsanto.

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Pesticide education activities

Once the community is engaged in a discussion of the problems caused by pesticides, you can organize group activities to learn more. The activities on the next 3 pages can be useful to help the community learn the causes of many pesticide problems, and to begin working towards solutions.

BODY MAPPING

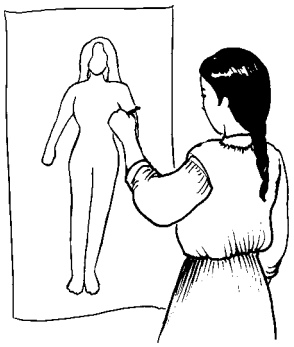
This can help people share their experiences of how pesticides affect them. By drawing a body map and marking where they have been affected by pesticides, people can begin to discuss common dangers they face in their work. This is a drawing activity and a group discussion.

Time: 1/2 hour to 1 hour.

Materials: large drawing paper, pens or pencils, tacks or tape.

➡ Step 1: Make a large body drawing

Make a large drawing of a person's body. If you have sheets of paper that are as large as a person, one person can lie down on the paper while another person traces her outline. Next tape or tack the drawing to the wall so that everyone can see it. If you want you can make two drawings — one for the front of the body and one for the back of the body.



➡ Step 2: Mark the effects of poison

Use the drawings to show what parts of our bodies are affected by pesticides. Each person in the group marks an "X" on a part of the body where he or she has been affected by pesticides. If the group is small, each person can say out loud what the health effect was. For example, was it stomach pain, skin rashes, dizziness? She might also say what caused the health effect. Was it a spill, a mixing accident, drift, just normal work, or something else?

If the group is large, it may be easier for one person to guide the discussion of health effects. After everyone makes their marks, the activity leader can point to each mark and ask what effect the mark represents. The important thing is that people use the drawing to show their own experience of being affected by pesticides.

➡ Step 3: Group talk

The activity leader can ask questions to help people talk about pesticides. (It can be helpful for another person to take notes on a large sheet of paper that everyone can see.) The talk may be most useful if it is limited to 3 main questions, such as: What effects have people felt from pesticides? What activities or kinds of exposure have caused the effects? What pesticides have caused the effects?

The talk may show how many people suffer from the same problems with pesticides. The body map shows where people feel the harmful effects of pesticides. The discussion and the notes are a good way to record people's experiences and show what exposures are most common, in order to prevent these exposures.

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Pictures are useful for starting discussions. The picture below can be used in a group activity to talk about how people are harmed by pesticides.

Drawing for Discussion: How do pesticides enter the body?

- In what ways could this man be harmed by what he is doing?
- What can he do to protect himself?
- Who else may be affected by his actions?
- What are some reasons why he is not doing everything he can to protect himself?

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DRAWING PESTICIDE SOLUTIONS

If people are already aware that pesticides are harmful, this activity will help them think up solutions. It is helpful to have one person lead the activity.

Time: 2 to 3 hours.

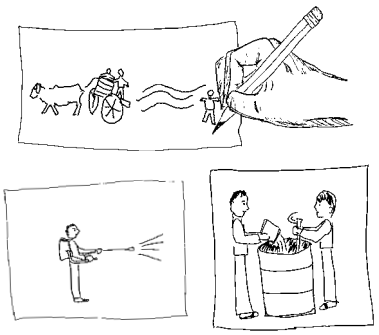
Materials: drawing paper, colored pens or pencils, tacks or tape.

➡ Step 1: Talk about pesticide problems

Discuss common ways that people in the community come in contact with pesticides.

➡ Step 2: Drawing pesticide problems

Each person draws a picture of one way that people are exposed to pesticides. These pictures are then taped or tacked to a wall. The group then looks at the drawings and decides on the 3 to 5 most common problems they see there. Next, the group begins to talk about what might cause these problems. What makes these problems so common? Why are they so difficult to overcome?



➡ Step 3: Drawing solutions

In groups, people discuss possible solutions and draw pictures of their ideas. For example, if the problem is exposure from leaking backpack sprayers, short-term solutions include fixing the leaks and wearing protective clothing. Long-term solutions might include buying new equipment or changing to organic farming. A group might draw any or all of these solutions. Often a solution will solve more than one problem.

Tape or tack the solution drawings to another wall.

➡ Step 4: Talk about solutions

Talk about the different solutions that people drew. Which solutions can be achieved soon? Which solutions will take longer to achieve? The drawings can be re-arranged so that the most practical short-term solutions are at the top. Talk about how to achieve these solutions and work toward the longer term solutions too. Organize groups to make these solutions happen!

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Pesticides and the Law

Most countries have national laws to protect farmers and workers from pesticide poisoning. Some of these laws ban certain pesticides, or say that companies have to inform workers about safety precautions and health risks, or make business owners give their workers protective equipment and training. But too often these laws are not enforced.

There are also international laws that protect people from pesticide poisoning. The sale and use of some pesticides violates an international treaty called the *Stockholm Convention on Persistent Organic Pollutants (POPS).* Because many pesticides have serious health effects on children, countries that allow their use may be in violation of *The Convention on the Rights of the Child.* As part of a community pesticide education program, you can learn about these laws and how they can be used to help protect you and your family from being poisoned.

International pesticide law

All countries that are members of the United Nations Food and Agriculture Organization (FAO) and United Nations Environment Program have agreed to follow the *International Code of Conduct on the Distribution and Use of Pesticides*. Find out if your country is a member of the FAO. If it is, your government has promised it will obey the Code.

If so, these are some things your government must make the pesticide industry do to protect pesticide users:

- Stop selling the most dangerous pesticides.
- Educate people about pesticide safety.
- Train all people who sell pesticides.
- Follow international standards for making, packaging, storing, labeling, and advertising.
- Ensure that packaging and repackaging are done only in safe, licensed places.

Prior Informed Consent (PIC)

Pesticide corporations in rich countries often get rid of banned or restricted pesticides by selling them to poor countries. These pesticides may have terrible health and environmental risks. The *Prior Informed Consent (PIC)* rule of the FAO Code gives countries the right to know about the dangers of the pesticides and chemicals that are entering their country. All countries that sign the PIC must share information on pesticides and chemicals that they have banned or restricted. Countries must also watch pesticide companies that are making chemicals that have been banned by other nations. Countries have the right to refuse to import any pesticide on the PIC list.

Pesticide companies may not want to follow the FAO code, so communities who work with pesticides need to make sure the companies obey the law and put people's health and safety first. This is why it is important for communities to know what pesticides are used in their area. See page 37 for resources.
To find out if your country is a member of the FAO and if they have signed the PIC, contact:

FAO Joint Secretary to PIC
Plant Protection Service,
Plant Production and Protection Division
FAO
Viale delle Terme di Caracalla
Rome 00100 ITALY

tel: (+39 6) 5705 3441
fax: (+39 6) 5705 6347
website: www.fao.org/pic
email:pic@fao.org

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List of Difficult Words

Activated Charcoal — a remedy for pesticide poisoning. Activated charcoal is wood charcoal that has been puffed with tiny pockets of air. It helps to absorb poison that has been swallowed. It is sold in pharmacies. Regular wood charcoal works also but not as well. Charcoal briquettes do **NOT**work (they are filled with chemicals and are poison!).

Active ingredient — the part of a pesticide that kills pests.

Acute — when something happens suddenly, and is serious or strong. An acute illness is one that comes quickly and can be very dangerous.

Cancer — a deadly disease that can affect many parts of the body. Many pesticides cause cancer.

Chronic — something that lasts for a long time or that happens often. A chronic illness is an illness that lasts for many years and is difficult to treat or cure.

Consumers — people who buy and use products.

Export — to sell a product from one country to another country.

Exposure — the way a person comes in contact with something.

Inert Ingredient — the part of a pesticide that is not the active ingredient. Inert ingredients include things that make pesticides stick to plants and bugs or prevent them from being washed off in the rain. These ingredients are often very poisonous.

Inputs — anything that a farmer buys to help crops grow. Pesticides and fertilizers are two kinds of inputs.

Ipecac Syrup — a medicine that makes people vomit. It is used after someone has swallowed poison.

Organic agriculture — agriculture that does not use chemical fertilizers or pesticides. Before pesticides were invented all farming was organic farming. The word organic also refers to the crops grown without chemicals.

Pesticides — poisonous chemicals used to kill insects, weeds, rodents, and plant diseases.

Reproductive Health — health issues that affect the parts and processes of men's and women's bodies that that allow them to make a baby.

Residue — the dry powder or oily film that stays on crops after the pesticide spray dries.

Respirator — a protective mask that covers the nose and mouth and keeps people from breathing in poisons. Respirators have different kinds of filters for different kinds of poison. In order to work well a respirator must have the correct filter and must be cleaned often. It also must fit very tightly so that no poison gets through.

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Where to Get More Information About Pesticides

Pesticide Action Network (PAN) is a network of over 600 non-governmental organizations, institutions and individuals in more than 60 countries. They work to replace the use of dangerous pesticides with healthy alternatives. You can contact PAN to find out which pesticides are banned in your country.

PAN also provides information on the uses and health effects of particular pesticides. To find this information on their website, go to *www.pesticideinfo.org*

PAN's projects and campaigns are coordinated by five independent Regional Centers.

PAN Centre Regional Pour L'Afrique (PAN Africa)
BP 15938 Dakar-Fann, Dakar, Senegal.
tel: (+221) 254 914; Fax: (+221) 254 914;
email: panafric@telecomplus.sn
website: www.pan-africa.sn

PAN Asia and the Pacific (PANAP)
PO Box 1170, 10850 Penang, Malaysia.
tel: (+604) 657 0271/656 0381;
fax: (+604) 675 7445;
email: panap@panap.po.my
website: www.panap.net

PAN Europe
c/o The Pesticides Action Network UK,
Eurolink Business Centre,
49 Effra Road, London SW2 1BZ, UK.
tel: (+44) 207 274 8895;
fax: (+44) 207 274 9084;
email: admin@pan-uk.org
website: www.pan-europe.net

PAN UK: www.panuk.org

PAN Germany: www.pan-germany.org

PAN Latin America (RAPAL)
c/o Red de Acción en Alternativas al uso de Agroquímicos (RAAA)
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